

WHAT IS CLAIMED IS:

1. A radioisotope generating apparatus for generating a radioisotope, comprising:
5 a nuclear reaction section an interior of which is retained in a vacuum;
 a source supply section for supplying a source material consisting of a nuclide necessary for generation of the radioisotope, to said nuclear reaction section;
10 an optical system for irradiating said source material supplied into said nuclear reaction section and thereby brought into a dispersed state, with pulse laser light, thereby inducing a nuclear reaction in said source material to generate the radioisotope;
15 a product nucleus collecting section for collecting a molecule having a nucleus of the radioisotope generated in said nuclear reaction section; and
 a radiation shielding system for preventing
20 outside leakage of radiations generated in said nuclear reaction section.

- 25 2. The radioisotope generating apparatus according to Claim 1, further comprising:

 a nuclear reaction monitor section for monitoring reaction product particles in said nuclear reaction

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section; and

a nuclear reaction control section for
controlling a supply condition of said source material
in said source supply section, based on output of said
nuclear reaction monitor section.

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